AMENDMENTS TO THE CLAIMS

Claims 1-24 were pending in the application. Claim 1 is an independent claim and claims 2-24 depend therefrom. Claims 25-31 were previously withdrawn and are currently canceled. Claims 1-19 and 21-23 are currently amended.

Listing of Claims:

This listing of claims will replace all prior versions and listings of claims in the application.

1. (Currently Amended) A system that enhances the performance of an existing cochlear implant using a hearing aid preprocessing device ~~preprocessor~~, the system comprising:

said hearing aid preprocessing device comprising:

a plurality of hearing aid signal input devices, comprising ~~at least~~ one or both of a hearing aid microphone and a hearing aid telecoil[[;]],

a first processor coupled to said plurality of hearing aid signal input devices for performing signal processing on signals received from said plurality of hearing aid signal input devices~~, wherein said first processor comprises at least one automatic switching mechanism configured to at least one of:~~

~~switch between modes of said microphone,~~

~~switch between said microphone and said telecoil based at least in part on detection of a magnetic field, and~~

~~switch between a plurality of listening programs based at least in part on detected characteristics of signals received from said plurality of signal input devices~~; and

said existing cochlear implant comprising:

at least one cochlear implant signal input device, comprising one or both of a cochlear implant direct audio input and a wireless receiver for receiving said processed signals from said hearing aid preprocessing device;

a second processor that processes and encodes said ~~the~~ signals received by said at least one cochlear implant signal input device,

a transmitter for transmitting said processed and encoded signals to an implanted portion of said existing cochlear implant; ~~in cochlear implants~~

wherein said existing cochlear implant is retrofitted with said hearing aid preprocessing device by communicatively coupling an output of said hearing aid preprocessing device with one or both of said at least one cochlear implant signal input device of said existing cochlear implant.

2. (Currently Amended) The system according to claim 1 wherein said plurality of hearing aid signal input devices comprises a direct audio input.

3. (Currently Amended) The system according to claim 1 wherein the first processor comprises at least one of algorithms stored in a memory and ~~or~~ chips used in hearing aids, hearing protectors, and other audio devices.

4. (Currently Amended) The system according to claim 1 wherein said hearing aid preprocessing device comprises a compatibility matching circuit coupled to said first processor for adjusting the processed signals received from said first processor to match at least one signal requirement of said existing cochlear implant ~~algorithms associated with the first processor are implemented in the same chip and case as algorithms associated with the second processor~~.

5. (Currently Amended) The system according to claim 1 wherein the first processor and the plurality of hearing aid signal input devices are housed in a first case.

6. (Currently Amended) The system according to claim 5 wherein the second processor and the at least one ~~plurality of~~ cochlear implant signal input device[[s]] are housed in a second case.

7. (Currently Amended) The system according to claim 6 wherein an output of said hearing aid preprocessing device ~~the first processor~~ is fed into said existing cochlear implant ~~the second processor~~.

8. (Currently Amended) The system according to claim 6 wherein said output of said ~~the~~ hearing aid preprocessor ~~system further~~ comprises[[:]]

a wireless transmitter connected to the first processor configured to transmit said processed signals from said first processor to said wireless receiver of said existing cochlear implant; ~~and~~

~~a wireless receiver connected to the second processor, wherein an output of the first processor is wirelessly transmitted via the wireless transmitter to an input of the second processor via the wireless receiver~~.

9. (Currently Amended) The system according to claim 3 ~~1~~ wherein the algorithms stored in said memory comprise noise reduction algorithms ~~the system further comprises the plurality of signal input devices housed in a first case~~.

10. (Currently Amended) The system according to claim 3 ~~9 wherein the first processor is housed in the first case~~ wherein the algorithms stored in said memory comprise speech enhancement algorithms.

11. (Currently Amended) The system according to claim 3 ~~9 wherein the second processor is housed in the first case~~ wherein the algorithms stored in said memory comprise adaptive directionality algorithms.

12. (Currently Amended) The system according to claim 3 ~~9 wherein the system further comprises a circuit that provides compatibility matching between the first processor and the second processor~~ wherein the algorithms stored in said memory comprise microphone-matching algorithms.

13. (Currently Amended) The system according to claim 3 ~~1 wherein the system further comprises the plurality of signal input devices housed in a first and second case~~ wherein the algorithms stored in said memory comprise at least one automatic-switching algorithm configured to switch between modes of said hearing aid microphone.

14. (Currently Amended) The system according to claim [[1]]3 ~~wherein the first processor is housed in the first case~~ wherein the algorithms stored in said memory comprise at least one automatic-switching algorithm configured to switch between said hearing aid microphone and said hearing aid telecoil based at least in part on detection of a magnetic field.

15. (Currently Amended) The system according to claim 3 ~~14 wherein the second processor is housed in the second case~~ wherein the algorithms stored in said memory comprise at least one automatic-switching algorithm configured to switch between a plurality of listening programs based at least in part on detected characteristics of said signals received from said plurality of hearing aid signal input devices.

16. (Currently Amended) The system according to claim 13 wherein the second processor comprises two second processors configured to receive from said at least one cochlear implant signal input device, said signals processed by said hearing aid preprocessing device via a "Y" connection for bilateral cochlear implants ~~receives a processed signal from the first processor via the signal input device in the second case~~.

17. (Currently Amended) The system according to claim 4 wherein said at least one signal requirement of said existing cochlear implant corresponds to a signal format requirement ~~1 wherein the system further comprises the plurality of signal input devices housed in a first case~~.

18. (Currently Amended) The system according to claim 4 wherein said at least one signal requirement of said existing cochlear implant corresponds to a signal scaling requirement ~~17 wherein the first processor and the second processor are housed in a second case.~~

19. (Currently Amended) The system according to claim 4 wherein said at least one signal requirement of said existing cochlear implant corresponds to an impedance matching requirement ~~9 wherein the system further comprises a circuit that provides compatibility matching between the first processor and the second processor~~.

20. (Previously Presented) The system according to claim 1 wherein the first processor comprises at least one of:

at least one signal processing stage;

at least one signal processing algorithm stored in a memory; and

at least one component.

21. (Currently Amended) The system according to claim 4 wherein said compatibility matching circuit is configured to minimize distortion of said processed signals received from said first processor of said hearing aid preprocessing device ~~20 wherein the second processor utilizes at least a portion of the first processor~~.

22. (Currently Amended) The system according to claim [[2]]1 wherein said hearing aid microphone comprises directional microphones ~~the first processor contains at least one signal feeding point and at least one signal extraction point to which connection can be made to feed signals into and extract signal from the system~~.

23. (Currently Amended) The system according to claim 1 wherein the second processor comprises multiple signal processing stages~~, wherein the first processor is connected between the multiple signal processing stages of the second processor~~.

24. (Original) The system according to claim 1 wherein the second processor is an amplification device.

25-31. (Canceled)